



User Manual for Digital Temperature Expansion (GT082T)



Revision: V1.0 Last Edited 1 October 2013

Before Attempting to connect or operate this product, please read these instructions in its entirety

This manual is intended to provide detailed technical specifications and explanations, to the basic user as well as the more technically-minded person. This manual is a live document, and will be updated often with new information. Please insure that you have the latest version, by checking our website at: <http://www.gsmcommander.com>.

Changelog:
CDH 20 September 2013 - Created

TABLE OF CONTENTS

Device Overview.....	2
Features & Specifications.....	2
How to use it.....	3
Dimensions.....	4
Guarantee.....	5
Important Notice / Disclaimer.....	5
Manufacturer Contact details.....	5

1. DEVICE OVERVIEW

The Temperature Expansion (hereafter referred to as “device”) allows the GSM Commander to interface to up to 8 low cost temperature probes. (Only GC0641 and GC1281 Supported!). The GSM Commander base unit itself, supports up to 2 Analog Temperature probes, so with the addition of the device, the GSM Commander now supports up to 10 temperature inputs in total.

The device will, on power-up, determine which probes are connected to it, and will thereafter retrieve a reading from each probe once per second. The readings are populated into the Variables A-H inside the GSM Commander, in steps of 0.1 °C. The device will only populate those variables for which it has determined there to be a probe present. (So if you only connect the first two probes, then only Variables A,B will be populated by the device)

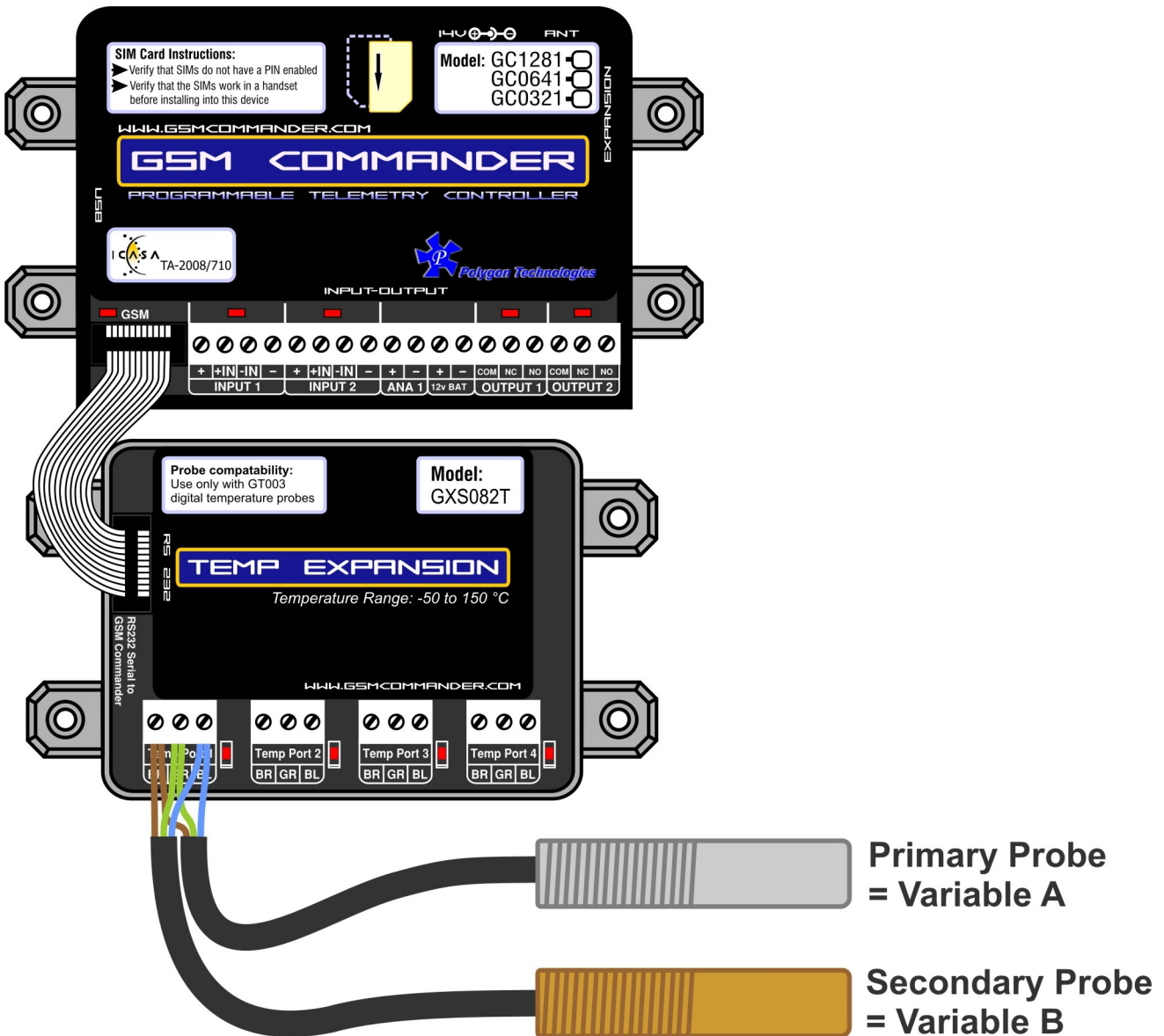
2. FEATURES & SPECIFICATIONS

Number of probes	8, in 4 groups of 2 each
Temperature measurement range	-50 °C to +150 °C
Probe Accuracy	0.5 °C from -10 to +85 °C
Probe Cable Length	Up to 50m (Or put differently, one HELL of a long way)
Probe Type	1Wire Digital Probe, DS18B20
Weight	100gram
Dimensions	146,2 x 85,2 x 27mm
Power Supply	Powered from host GSM Commander
Power Consumption	<1W
Operating Temperature	-10 °C to +60 °C
Storage Temperature	-20 °C to +80 °C

3. HOW TO USE IT

3.1. Basic Connections

The device has a serial port, which must be connected to the serial port of the host GSM Commander (GC0641 or GC1281) via the supplied ribbon cable. For the probes, the device has 4 x ports, each of which can take two probes, connected in **parallel**. Digital communication between the probes and the device allows us to differentiate between different probes on the same port.



3.2. Probe Identification

In order to differentiate between probes, there are Primary and Secondary probes available. Primary probes are silver in colour, or will be marked with a WHITE coloured band. Secondary probes are GOLD in colour, or will be marked with a YELLOW coloured band.



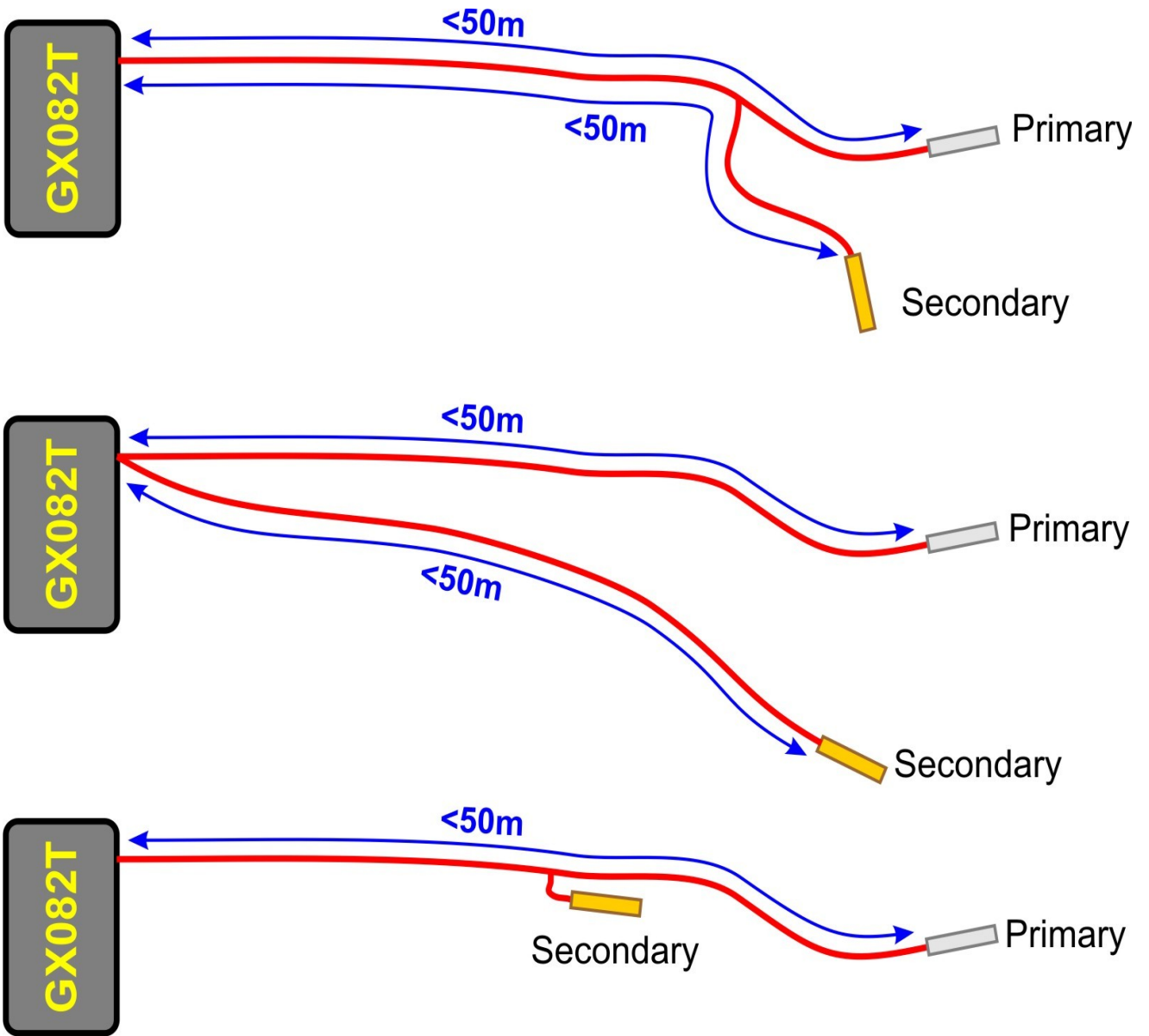
You need to connect ONE Primary and ONE secondary probe to each port. One cannot connect two primary or two secondary probes to the same port. The reading from the Primary Probe on Port 1, will be populated into Variable A on the host GSM Commander, while the reading from the secondary probe will be populated into Variable B on the host GSM Commander.

Likewise:

The Primary and Secondary probes on Port 2 correspond to Variables C, D
The Primary and Secondary probes on Port 3 correspond to Variables E, F
The Primary and Secondary probes on Port 4 correspond to Variables G, H

3.3. Wiring Topologies

You may connect your two probes to any port, in any combination, as long as the maximum distance to any probe is 50m or less. Any of the below methods are considered acceptable.



4. GUARANTEE

The device is guaranteed for a period of **24 months** against defects in materials or workmanship. Should your product become defective during the guarantee period it will be repaired or replaced at the sole discretion of **Polygon Technologies** under the following conditions:

A: The unit must not have been opened or otherwise tampered with. If the enclosure of any unit has been opened at all, the guarantee will be null and void.

B: The guarantee does not cover damage resulting from excessive input voltages, lightning, power surges or water ingress.

A decision about issues A and B will be at the sole discretion of **Polygon Technologies**. This guarantee does not provide for shipping costs. This will be for the account of the user under all circumstances.

5. IMPORTANT NOTICE / DISCLAIMER

Herein, “the Company” will mean:

Polygon Technologies CC, its directors, members, employees and agents.

Much effort has been made to ensure the contents of this manual are complete and without errors. Nonetheless, the Company cannot be held liable for any damages directly or indirectly resulting from any errors in this manual.

The Company will under no circumstances be held liable for any injuries/death or damages that result from the use of this product, irrespective of whether such injuries/death or damages resulted from a faulty product or negligence of any kind on the part of the Company.

All Information and images in this manual are proprietary to **Polygon Technologies CC**. The manual as a whole may be distributed and copied freely, but no partial content may be used/copied or distributed in any way. No part of the product (including the hardware, firmware and software) may be copied or reverse-engineered.

Polygon Technologies CC reserves the right to make changes to contents of this manual, without notice, at any time.

6. MANUFACTURER CONTACT DETAILS

Polygon Technologies may be contacted at:

Email: Info@gsmcommander.com

Web: www.gsmcommander.com

Telephone: +27(0)21 9817062

Fax: +27(0)86 6823310

Postal Address: PO Box 1655

Brackenfell

7561

South Africa